

I claim:

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1. A polarized light beam splitter assembly comprising:
a polarized light beam splitter prism including a first internal exposed surface and
a second internal exposed surface; and
a wire grid polarizer including a first surface and a second surface including a
perimeter region and a central region, said first surface of said wire grid polarizer secured
to said first internal exposed surface of said prism, and said second surface of said wire
grid polarizer secured to said second internal exposed surface of said prism in said
perimeter region so as to define a gap between said second surface of said wire grid
polarizer and said second internal exposed surface of said prism in said central region.
 2. The assembly of claim 1 further comprising spacers positioned within said
perimeter region, said spacers having a height that defines a width of said gap.
 3. The assembly of claim 2 wherein said second surface of said wire grid polarizer is
secured to said second internal exposed surface of said prism in said perimeter region by
an adhesive, and wherein said spacers are distributed within said adhesive.
 4. The assembly of claim 2 wherein said spacers are formed on said second surface
of said wire grid polarizer.
 5. The assembly of claim 2 wherein said spacers each define a rigid sphere, and
wherein said height of said spacers is equal to a diameter of said rigid spheres.
 6. The assembly of claim 1 wherein said prism comprises a glass cube.
 7. The assembly of claim 1 wherein said prism defines an elongate axis and wherein
said first and second internal exposed surfaces are positioned at an angle in a range of one
to eighty nine degrees with respect to said elongate axis.

8. The assembly of claim 7 wherein said first and second internal exposed surfaces are positioned at an angle in a range of forty to fifty degrees with respect to said elongate axis.

9. The assembly of claim 1 wherein said second surface of said wire grid polarizer includes a wire grid thereon such that said wire grid is in communication with said gap.

10. A polarized light beam splitter assembly comprising:

a polarized light beam splitter including an embedded wire grid polarizer having a wire grid in communication with an internal air gap;

a light source positioned to emit light to said polarized light beam splitter; and

a reflection device positioned to receive light redirected by said polarized light beam splitter.

11. The assembly of claim 10 wherein said light source emits light having a predetermined orientation, and wherein said reflection device is chosen from the group consisting of a liquid crystal display panel and a mirror and a quarter wave plate.

12. The assembly of claim 10 wherein said polarized light beam splitter defines an elongate axis and wherein said internal air gap is positioned at an angle of approximately forty five degrees with respect to said elongate axis.

13. The assembly of claim 10 wherein said polarized light beam splitter defines first and second sections, said embedded wire grid polarizer is secured to said first section, and said embedded wire grid polarizer is secured to said second section by adhesive having spacers distributed therein, wherein said spacers define a width of said internal air gap.

14. The assembly of claim 10 wherein said polarized light beam splitter comprises a glass prism.

15. The assembly of claim 10 wherein said air gap has a width in a range of one to thirty μm .

16. The assembly of claim 10 wherein said air gap has a width of approximately ten μm .

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17. A polarized light beam splitter system comprising:
a polarized light beam splitter including first and second sections;
an embedded wire grid polarizer including first and second surfaces, said embedded wire grid polarizer secured to said first section of said polarized light beam splitter at said first surface, and said embedded wire grid polarizer secured to said second section of said polarized light beam splitter in an edge region of said second surface; and
at least one spacer positioned between said second section of said polarized light beam splitter and said second surface of said embedded wire grid polarizer in said edge region.

18. The system of claim 17 wherein said spacer comprises a raised projection in said edge region of said second surface of said embedded wire grid polarizer.

19. The system of claim 17 comprising a plurality of spacers positioned between said second section of said polarized light beam splitter and said second surface of said embedded wire grid polarizer in said edge region, wherein said spacers comprise rigid spheres having a predetermined diameter.

20. The system of claim 17 further comprising an air gap positioned between said second section of said polarized light beam splitter and a central region of said second

surface of said embedded wire grid polarizer, wherein said wire grid polarizer includes a wire grid in communication with said air gap, and wherein said air gap has a uniform width across said air gap.

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